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HEARING ON THE NATIONAL DAM SAFETY PROGRAM

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Good Morning Chairman Shuster, Ranking Member Norton and members of the Subcommittee. My name is David Maurstad. I am the Director of the Mitigation Division in the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA). I am honored to appear before you today to testify on the need for the reauthorization of FEMA's National Dam Safety Program (NDSP).

There is a clear need for continued Federal leadership to support dam safety in the United States, and it is imperative that we remember and learn from the past. A series of dam failures in the 1970s caused the nation to focus on inspecting and regulating dams. On February 26, 1972, a dam owned by the Buffalo Mining Company in Buffalo Creek, West Virginia failed, devastating a 16-mile valley with 6,000 inhabitants. In minutes, 125 people were killed, 1,100 people were injured, and over 3,000 were left homeless. On June 5, 1976, Teton Dam, a 123-meter high earthfill dam on the Teton River in Idaho, failed, causing \$1 billion in damage and leaving 11 dead. In November 1977, Kelly Barnes Dam in Georgia failed, killing 39 people, most of them college students.

Despite the significant strengthening of dam safety programs since the 1970s, dams continue to fail, causing millions of dollars worth of damage and loss of life. For example, in March 2004, the Big Bay Lake Dam in Mississippi failed, destroying 48 homes, damaging 53 homes, 2 churches, 3 businesses, and a fire station, and washing out a bridge. In March 2006, the Kaloko Reservoir dam failed in Hawaii on the island of Kauai, releasing more than 300 million gallons of water, and killing 7 people. Recently, heavy rains caused seepage in the Lake Needwood Dam in Rockville, Maryland, forcing the evacuation of 2,200 residents. From the dike holding back the waters of Florida's Lake Okeechobee to 73 at-risk dams in Maine to the Folsom Dam in California, dams continue to present a significant risk to those living downstream and to their property.

The good news is that there has been a significant reduction in the loss of life from dam failures since the establishment of the National Dam Safety Program in 1979. According to the Association of State Dam Safety Officials (ASDSO), there were 28 dam failures in the United States from 1874 to 1979, resulting in 3,424 deaths. From 1979 to 2004, there were 55 dam failures that resulted in 28 fatalities. The aging of the national dam infrastructure would portend that dam failures will increase. However, two major components of the National Dam Safety Program, the inspection of dams and the development, implementation, and exercise of Emergency Action Plans (EAPs), are clearly helping to mitigate the risk from dam failure in the United States.

THE ROLE OF THE NATIONAL DAM SAFETY PROGRAM

The National Dam Safety Program, which was formally established by Section 215 of the Water Resources Development Act of 1996 (Public Law 104-303), provides critical support for the operation, maintenance, and improvement of our nation's dams. The Dam Safety and Security Act of 2002 (Public Law 107-310), which reauthorized the National Dam Safety Program through Fiscal Year (FY) 2006, continued all of the activities established by the 1996 Act.

The primary purpose of the National Dam Safety Program is to provide financial assistance to the States for strengthening their dam safety programs. Activities supported by the Program include: grant assistance to the States to support improvement of State-level dam safety programs, training for State dam safety staff and inspectors, and a technical and archival research program that includes development of devices to monitor the safety of dams. The Program also facilitates information exchange between Federal and State dam safety partners through the National Dam Safety Review Board and the Interagency Committee on Dam Safety (ICODS), both of which are chaired by FEMA.

State Dam Safety

According to the most recent update in February 2005 to the National Inventory of Dams (NID), there are approximately 79,500 dams in the United States. Of these, the States regulate approximately 63,000.

From FY 2004 through 2006, FEMA distributed a total of approximately \$9.75 million to 49 participating States and Puerto Rico for dam safety. Delaware joined the Program in 2005 after its passage of State dam safety regulatory legislation. Alabama, which is currently working on legislation, is now the only State not participating in the Program.

As a result of this funding, the nation's dam safety continues to improve. Using performance criteria developed by the National Dam Safety Review Board in 1998, the Program captures information on the number of State-regulated high- and significant-hazard potential dams with an Emergency Action Plan (EAP), the number of dam inspections conducted each year by each State, and the number of dams that have been identified by the States as in need of remediation.

Analysis of data from the States indicates that since 1998, the number of EAPs for State-regulated high- and significant-hazard potential dams has increased from 4,000 dams to approximately 8,000 dams. Today, approximately 42 percent of all State-regulated high- and significant-hazard potential dams have an EAP. The States of Alaska, Kansas, Nevada, New Jersey, Utah, Vermont, and Washington, and the U.S. territory of Puerto Rico, have reported particularly noteworthy increases in EAPs for high- and significant-hazard potential dams. As a result of the Federal and State partnerships fostered by the National Dam Safety Program, there is also an increased emphasis on basin-wide EAP exercises to more efficiently utilize the time and resources of dam safety officials and emergency response personnel.

The number of dam inspections conducted by the States has also increased since data was first collected for 1998-1999, from a total of approximately 12,000 inspections to approximately 14,000 inspections. This data is particularly impressive given the reported decreases in State dam safety budgets. According to the most recent information submitted by the States to ASDSO, State dam safety budgets have decreased by 12 percent over the past 2 years, from a total of approximately \$33 million in 2003 to approximately \$29 million in 2004.

Federal support for State dam safety programs, while relatively small, is critical, as there are a large number of dams that are considered “unsafe”-- i.e., the dam has an identified deficiency that makes it more susceptible to failure triggered by a large storm event, earthquake, or inadequate maintenance. There are now over 3,500 dams in the United States that have been identified as unsafe, a figure that has risen by 33 percent since 1998. There are also more than 11,000 dams in the United States that are classified as high-hazard potential, meaning that the consequences of the dam’s failure will likely result in the loss of human life and downstream property damage.

Research

Research funding under the National Dam Safety Program has addressed a cross-section of issues and needs, all in support of making dams in the United States safer. To guide decisions on the funding of specific research projects, the National Dam Safety Review Board developed a 5-year Strategic Plan. It ensures that priority is given to research projects that demonstrate a high degree of collaboration and expertise, and are likely to yield products that will contribute to the safety of dams in the United States. DHS is currently working to integrate the Review Board’s Strategic Plan with the dam security research plan developed for the Dam Sector Annex to the National Infrastructure Protection Plan (NIPP).

Training

Since the inception of the National Dam Safety Program, FEMA has supported a strong, collaborative training program for dam safety professionals and dam owners. With the training funds provided under Public Law 104-303 and Public Law 107-310, FEMA has been able to expand existing training programs, begin new initiatives to keep pace with evolving technology, and enhance the sharing of expertise.

The training activities conducted under the National Dam Safety Program include national training opportunities, most of which are conducted at FEMA’s Emergency Management Institute (EMI), regional training conducted by ASDSO and other private vendors, local training through direct assistance to the States, and self-paced training. Examples of training activities include the National Dam Safety Program Technical Workshops on hydrologic deficiencies and potential failure mode analysis and monitoring, the ASDSO Regional Technical Seminars, State training assistance funds, hydrologic modeling system and river analysis system workshops at FEMA’s EMI, and the Training Aids for Dam Safety (TADS) Program. The Program is also working with the U.S. Army Corps of Engineers to make training materials available on the Corps’ Learning Network website at <http://usaceln.org/technical>. This effort, which will give

these products broad distribution, is scheduled for completion by the end of FY 2006.

Information Technology

Technology can provide critical tools for the mission of the National Dam Safety Program. It is an objective of the NDSP leadership to identify, develop, and enhance technology-based tools that can help educate the public and assist decision-makers.

The National Inventory of Dams (NID), the Dam Safety Program Management Tools (DSPMT) Program, and the National Performance of Dams Program (NPDP) all receive funding under the National Dam Safety Program and are collecting invaluable data on the status of dams, dam incidents, and dam safety programs. In turn, these data assist National Dam Safety Program partners in better documentation of failure modes and identification of research and training needs.

Federal Programs

Although the Federal Government owns or regulates only about 5 percent of the dams in the United States, many of these dams are significant in terms of size, function, benefit to the public, and hazard potential. Since the implementation of the Federal Guidelines for Dam Safety, the Federal agencies have performed an exemplary job in ensuring the safety of dams within their jurisdiction. The Federal Guidelines for Dam Safety were developed by the Interagency Committee on Dam Safety in 1979 and was reprinted by FEMA in 2004. These guidelines represent the culmination of efforts, initiated by President Carter in 1977, to review procedures and criteria used by Federal Agencies involved in the design, construction, operation and regulation of dams and to prepare guidelines for management procedures to ensure dam safety. These guidelines apply to Federal practices for dams with a direct Federal interest and are not intended to supplant or otherwise conflict with State or local government responsibilities for safety of dams under their jurisdiction.

All of the Federal agencies responsible for dams have implemented the provisions of the Federal Guidelines. Many of the Federal agencies also continue to maintain very comprehensive research and development programs and training programs, and they have now incorporated security considerations and requirements into these programs to protect their dams against terrorist threats.

In addition, there has been increased cooperation and coordination between the Federal agencies and the States in many areas, such as emergency action planning, inspection, research and development, training, and information exchange. Clearly, the partnerships that have been fostered and enhanced by collaborative activities under the National Dam Safety Program are helping to meet the primary objectives of the Act.

Dam Security

Dam safety and dam security are complementary programs, and there will continue to be collaboration and coordination between dam sector stakeholders. For example, in FY 2007, FEMA will participate on groups chaired by DHS's Risk Management Division

(RMD) for the Dam Sector, such as the Dams Government Coordinating Council (DGCC), and the DGCC and Joint Sector Workgroups. There is significant cross-representation of the Federal and State professionals involved in dam safety and dam security who serve on the DHS-chaired groups and the groups chaired by FEMA under the National Dam Safety Program, including the National Dam Safety Review Board and ICODS. FEMA's continued participation on the DGCC and GCC/Joint Sector Workgroups will facilitate the ability of both groups to address issues of common concern.

Aging of America's Dams

Despite the achievements realized under the National Dam Safety Program, there continue to be challenges for everyone in the dam safety community. The aging of dams in the United States continues to be a critical issue for dam safety. The *2005 Report Card for America's Infrastructure* (American Society of Civil Engineers, March 2005) states that the number of unsafe or deficient dams in the United States has risen by more than 33 percent since 1998, to more than 3,500. These statistics focus on the crux of one of the most important issues: the aging of the nation's water control infrastructure and the strategy for coping with the problem in an era of diminishing resources. The *Report Card* states that while federally-owned dams are in good condition and there have been modest gains in repair, the number of dams identified as deficient is increasing at a faster rate than those dams that are being repaired. It is estimated that as of 2002, 85 percent of dams across the United States were 50 years or older.

The dam safety community is working on a number of options to address the remediation of deficient dams, including model loan programs for the repair of dams, dam removal projects, and rehabilitation programs. Some progress is being made through the repair of small watershed dams constructed with assistance from the U.S. Department of Agriculture. Although the Dam Safety and Security Act of 2002 states that funds provided to the States cannot be used for the construction or rehabilitation of dams, it is the intent of the National Dam Safety Program to track data on the identification and remediation of high-hazard potential deficient dams as an indication of overall progress.

Identification and Classification of Dams

A long-standing issue relates to the identification and hazard classification of dams. There are a number of unregulated dams, a number of dams that have not been classified correctly, and others whose classification has changed over time, particularly in light of increases in downstream populations. Moreover, hazard classification alone does not give a clear picture of the risk of failure, as the classification is independent of the condition of the dam and represents only the potential consequences in terms of loss of life and property damage downstream. A number of Federal agencies are increasing their focus on the development of risk analysis methods and the best ways in which to incorporate risk analysis into evaluation and decision-making processes.

The tracking of data on inspections should provide valuable information to identify those dams in the United States that are in need of remediation.

Emergency Action Planning

Emergency action planning also continues to be of critical importance to the safety and security of dams in the United States. EAPs are the principal tool used by first responders to warn and evacuate the vulnerable population below the dams. The exemplary emergency action planning program established by the Federal Energy Regulatory Commission incorporates all of the procedures and products needed for the implementation and exercise of EAPs among all associated entities.

Participation of all States in the National Dam Safety Program

Again, Alabama is now the only State not participating in the National Dam Safety Program. One of the goals of the Program is for the State of Alabama to enact legislation so that it can participate and bring the number of participating States to 50.

Conclusion

Although the National Dam Safety Program is a relatively small program, it has helped significantly to encourage appropriate actions that address the risks associated with the nation's more than 79,000 dams. Through grants, training support, research, data collection, and other activities, the Program provides a much needed impetus for the ongoing safeguarding and protection of people, property, and the dams themselves.

Mr. Chairman, thank you for the opportunity to testify before you today, I will be pleased to take any questions from you and the members of the Committee.